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(54) **Non-carcinogenic corrosion inhibiting additive**

(57) A non-carcinogenic corrosion inhibiting additive includes an anodic corrosion inhibitor and a cathodic corrosion inhibitor.

EP 1 191 073 A3



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 902 103 A (NIPPON STEEL CORP) 17 March 1999 (1999-03-17) * claims 1-43,13-16; table 2 *	1-7,9-16	C09D5/08 C23F11/18
X	US 5 006 588 A (MILLER ROBERT N) 9 April 1991 (1991-04-09) * claims 1-6 *	1-3,5-7, 9-14	
X	US 6 017 491 A (SHARABY AHMED ET AL) 25 January 2000 (2000-01-25) * column 10; claims 1,7,10,16; tables II,IV *	1-3,5-7, 9-14	
X	EP 0 429 180 A (LOCKHEED CORP ;PROD RES & CHEM CORP (US)) 29 May 1991 (1991-05-29) * page 8; claims 1-4,10,18; tables II,IV *	1-3,5-7, 9-14	
X	EP 0 634 461 A (TAYCA CORP) 18 January 1995 (1995-01-18) * claims 1,5; table 2 *	1,5-7,9, 11-14	
X	US 5 322 560 A (DEPUE JEFFREY S ET AL) 21 June 1994 (1994-06-21) * claims 1-6,14 *	1-7,9, 12-15	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C23F C09D
X	EP 0 931 854 A (ATOCHEM ELF SA) 28 July 1999 (1999-07-28) * example 4 *	1-3,5-7, 9	
X	EP 0 085 562 A (EXXON RESEARCH ENGINEERING CO) 10 August 1983 (1983-08-10) * claim 1; table 1 *	1-3,9	
X	WO 96 10543 A (DREW CHEM CORP) 11 April 1996 (1996-04-11) * claim 1 *	1,9	
		-/--	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 March 2003	Examiner Torfs, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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Application Number
EP 01 12 1594

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P, X	US 6 190 780 B1 (SAKON TADASHI ET AL) 20 February 2001 (2001-02-20) * claims 1,2,5,9; table 31 * -----	1-7,9-16	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 March 2003	Examiner Torfs, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 12 1594

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-03-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0902103	A	17-03-1999	AU 716052 B2	17-02-2000
			AU 1558897 A	22-08-1997
			EP 0902103 A1	17-03-1999
			US 6190780 B1	20-02-2001
			CN 1213410 A	07-04-1999
			WO 9728291 A1	07-08-1997

US 5006588	A	09-04-1991	US 6017491 A	25-01-2000

US 6017491	A	25-01-2000	US 5006588 A	09-04-1991
			US 5077096 A	31-12-1991
			US 5244956 A	14-09-1993
			AT 107367 T	15-07-1994
			AU 642356 B2	14-10-1993
			AU 3034492 A	11-02-1993
			AU 655371 B2	15-12-1994
			AU 4749193 A	09-12-1993
			AU 641437 B2	23-09-1993
			AU 6487690 A	26-04-1991
			CA 2028191 A1	24-04-1991
			CA 2186647 A1	24-04-1991
			CA 2186648 A1	24-04-1991
			CN 1051190 A ,B	08-05-1991
			CN 1215742 A	05-05-1999
			CN 1191233 A	26-08-1998
			CN 1191234 A	26-08-1998
			DE 69009942 D1	21-07-1994
			DE 69009942 T2	22-12-1994
			DK 429180 T3	24-10-1994
			EP 0429180 A2	29-05-1991
			ES 2057434 T3	16-10-1994
			JP 2002056 C	20-12-1995
			JP 3199385 A	30-08-1991
			JP 7026216 B	22-03-1995
			RU 2057819 C1	10-04-1996

EP 0429180	A	29-05-1991	US 5077096 A	31-12-1991
			AT 107367 T	15-07-1994
			AU 642356 B2	14-10-1993
			AU 3034492 A	11-02-1993
			AU 655371 B2	15-12-1994
			AU 4749193 A	09-12-1993
			AU 641437 B2	23-09-1993
			AU 6487690 A	26-04-1991
			CA 2028191 A1	24-04-1991
			CA 2186647 A1	24-04-1991

EPO FORM P0459

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 12 1594

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-03-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0429180 A		CA 2186648 A1	24-04-1991
		CN 1051190 A ,B	08-05-1991
		CN 1215742 A	05-05-1999
		CN 1191233 A	26-08-1998
		CN 1191234 A	26-08-1998
		DE 69009942 D1	21-07-1994
		DE 69009942 T2	22-12-1994
		DK 429180 T3	24-10-1994
		EP 0429180 A2	29-05-1991
		ES 2057434 T3	16-10-1994
		JP 2002056 C	20-12-1995
		JP 3199385 A	30-08-1991
		JP 7026216 B	22-03-1995
		RU 2057819 C1	10-04-1996
		US 6017491 A	25-01-2000
EP 0634461 A	18-01-1995	JP 3186908 B2	11-07-2001
		JP 7034269 A	03-02-1995
		DE 69402623 D1	22-05-1997
		DE 69402623 T2	04-09-1997
		EP 0634461 A2	18-01-1995
		US 5482544 A	09-01-1996
US 5322560 A	21-06-1994	BR 9403371 A	09-05-1995
		CA 2129859 A1	01-03-1995
		DE 69426181 D1	30-11-2000
		DE 69426181 T2	17-05-2001
		EP 0640668 A1	01-03-1995
		ES 2152961 T3	16-02-2001
		JP 7150374 A	13-06-1995
EP 0931854 A	28-07-1999	AU 9824998 A	12-08-1999
		BR 9900020 A	14-12-1999
		EP 0931854 A1	28-07-1999
		IL 127403 A	20-05-2001
		JP 11241191 A	07-09-1999
		TW 457304 B	01-10-2001
		US 6120619 A	19-09-2000
EP 0085562 A	10-08-1983	US 4499003 A	12-02-1985
		US 4405584 A	20-09-1983
		CA 1188879 A1	18-06-1985
		DE 3363561 D1	26-06-1986
		EP 0085562 A1	10-08-1983
		JP 58144481 A	27-08-1983
		MY 41187 A	31-12-1987

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 12 1594

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-03-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0085562	A		NO 830342 A , B, US 4590036 A	03-08-1983 20-05-1986
WO 9610543	A	11-04-1996	US 5578246 A AU 685327 B2 AU 3824395 A CA 2201510 A1 EP 0784599 A1 JP 10509477 T WO 9610543 A1 ZA 9508122 A	26-11-1996 15-01-1998 26-04-1996 11-04-1996 23-07-1997 14-09-1998 11-04-1996 16-09-1996
US 6190780	B1	20-02-2001	JP 10337530 A JP 11061431 A JP 11061429 A JP 11061432 A AU 716052 B2 AU 1558897 A CN 1213410 A EP 0902103 A1 WO 9728291 A1	22-12-1998 05-03-1999 05-03-1999 05-03-1999 17-02-2000 22-08-1997 07-04-1999 17-03-1999 07-08-1997

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82